

**BEFORE THE STATE OF WASHINGTON  
ENERGY FACILITY SITE EVALUATION COUNCIL**

IN RE APPLICATION NO. 99-1	)	
2 <sup>ND</sup> REVISED APPLICATION, JUNE 2001	)	
	)	EXHIBIT _____ (NEH-T)
SUMAS ENERGY 2 GENERATION	)	
FACILITY	)	

PREFILED DIRECT TESTIMONY OF  
NW ENERGY COALITION AND WASHINGTON ENVIRONMENTAL COUNCIL

WITNESS: NANCY ELLEN HIRSH

1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

3 R. My name is Nancy Hirsh. My business address is 219 1st Avenue South, Suite 100,  
4 Seattle, Washington, 98104.

5 **Q. By whom are you employed and in what position?**

6 R. I am employed by the NW Energy Coalition (NVEC) as Policy Director.

7 **Q. Please remind the Council of your background and experience.**

8 R. I have a Bachelor of Science degree from the School of Natural Resources at the  
9 University of Michigan. I spent twelve years in Washington, D.C. working for the  
10 National Wildlife Federation and Environmental Action Foundation on federal energy  
11 policy and electric utility issues, including greenhouse gas emissions reduction programs.  
12 I made numerous presentations to national and state audiences on the effect of federal and  
13 state laws on global warming and the need for more specific greenhouse gas emissions  
14 reduction programs. Since 1996, I have been the Policy Director for the NW Energy  
15 Coalition, coordinating the work of the policy team in advocating for investments in  
16 clean and affordable energy services. I serve as Chair of the Board of the Renewable  
17 Northwest Project and am on the Board of the Northwest Energy Efficiency Alliance. I  
18 formerly served as Chair of the Sierra Club National Energy Committee. I have served as  
19 an expert witness in regulatory proceedings in Georgia, Maryland, the District of  
20 Columbia, Oregon and Washington.

21 **Q. Please state the issues you will address in your direct testimony.**

1 R. My testimony focuses on actions taken by the Energy Facility Site Evaluation Council  
2 (EFSEC) during the past year related to mitigation of greenhouse gas emissions, and the  
3 corresponding inadequacy of the applicant's proposal in the second revised application to  
4 fully mitigate greenhouse gas emissions.

5 **Q. How will other testimony from the NW Energy Coalition and Washington**  
6 **Environmental Council (WEC) address carbon dioxide (CO<sub>2</sub>) emissions?**

7 R. Order Nos. 757 and 759 provide direction to intervenors to supplement the record with  
8 factual information about the implications of the applicant's current proposal for the  
9 S2GF. At the second prehearing conference on August 1, the Council indicated that  
10 significant changes in scientific information constituted supplemental information, but  
11 declined to further specify the scope of the upcoming adjudicated proceeding. Given the  
12 focus on supplemental information, two of NWEW/WEC's previous witnesses also will  
13 present testimony on new developments since August 2000 in mitigation of greenhouse  
14 gases. In his testimony (KCG-T), KC Golden discusses the City of Seattle's and Seattle  
15 City Light's recent activities related to mitigation of greenhouse gases and progress in  
16 meeting the Earth Day 2000 Resolution passed by the City Council. In his testimony  
17 (PGW-T), Peter West discusses new information related to Oregon's carbon standard and  
18 describes significant initiatives during the past year that emphasize the need for action to  
19 address global warming. He also responds to the applicant's prefiled direct testimony,  
20 addressing the implications of the current application for mitigation of greenhouse gases.

21 **II. COUNCIL DECISIONS REGARDING CO2 MITIGATION**

1 **Q. Since the last round of hearings in this proceeding in August 2000, EFSEC has**  
2 **issued orders and resolutions in other cases. Does precedent now exist for the**  
3 **Council to require full mitigation of CO2 emissions?**

4 R. Yes. Order 753 (p. 15) issued in February 2001 grants an increase in the generation  
5 capacity of the permitted Chehalis natural gas power plant from 460 MW to 520 MW.  
6 The same order requires the developer to “completely offset the total increase (8%) in  
7 greenhouse gas emissions that will result.” (Order 753, p. 28) The Order also states (p.  
8 27):

9 The Council does not find that the evidence precludes us from imposing any  
10 mitigation requirements for greenhouse gas emissions. The evidence is  
11 undisputed that the facility as originally certificated would emit 1.8 million  
12 tons of CO2 per year and that the proposed amendments will result in an  
13 increase in emissions of approximately eight percent. As stated above, the  
14 lack of a state or federal regulation does not preclude us from requiring  
15 mitigation for the impacts of the facility. Although the impacts may be  
16 global, the emissions that cause the impacts are identifiable, quantifiable, and  
17 local, and the impacts are felt locally. We can act locally. While it would be  
18 preferable to have national and state standards, mitigation of greenhouse gas  
19 emissions must start somewhere and the Council has the authority to address  
20 these impacts now.  
21

22 The Council required full mitigation of the additional CO2 emissions that would be  
23 produced by the Chehalis plant due to the increased capacity of that facility. In  
24 comparison, the proposed Sumas facility can be considered a 100% expansion, and thus  
25 should be required to offset 100% of its CO2 emissions.

26 **Q. In his testimony (Exh. 180, p. 22, ls. 37-39), Mr. Martin refers to Tractebel, the**  
27 **developer of the Chehalis power plant, paying only \$400,000 in greenhouse gas**  
28 **offsets. Is that your understanding?**

1 R. No. My understanding is that Tractebel must submit a CO2 emissions mitigation plan to  
2 the Council no later than one year from the effective date of Order No. 753 (effective  
3 February 12, 2001). The amended Site Certificate Agreement (SCA) for the Chehalis  
4 Generation Facility (CGF), issued in 2001, states (p. 19),

5 The Applicant shall develop a detailed and specific plan and recommended strategies  
6 to offset the total increase (8%) in greenhouse gas emissions from the CGF that will  
7 result from Amendment No. 1 to this SCA. These strategies may include conservation  
8 programs designed to reduce the production of CO2 and other greenhouse gases. The  
9 plan must include all supporting material necessary to evaluate the proposed  
10 strategies and must be submitted to the Council for its review and approval no later  
11 than one year from the effective date of Council Order No. 753. Upon submittal of the  
12 greenhouse gas emission offset plan, the Council will review the plan for actions that  
13 will lead to actual offsets of greenhouse gas emissions by the CGF. Chehalis Power  
14 will be required to implement effective strategies meeting the requirements of this  
15 Amended SCA on a schedule to be determined by the Council.  
16

17 The Council has neither accepted nor approved a plan yet for that facility. Further,  
18 Tractebel must ultimately demonstrate to the Council that its mitigation plan will actually  
19 offset the full increment of greenhouse gases emitted as a result of increasing the  
20 facility's capacity. In that context, the dollar amount associated with the plan becomes  
21 irrelevant. Instead, it is the principle of full mitigation established in Order 753 that is  
22 pertinent.

23 **Q. Has the Council taken other recent action related to mitigation of CO2 emissions**  
24 **from natural gas power plants?**

25 R. Yes, the Council has taken two other significant actions. First, in February 2001, as part  
26 of this proceeding, the Council recommended in Order 754 against issuing a permit for  
27 the proposed S2GF. In that Order, the Council concluded "SE2's proposed GHG Offset  
28 Plan fails to satisfy its general and specific obligations under governing law,"

1 contributing to the Council's decision to recommend against site certification (Order 754,  
2 p. 38-39). Because Order No. 754 recommends denial of the site certification agreement,  
3 the Council did not "analyze and determine in detail what precise [greenhouse gas  
4 emissions mitigation] standards the project would be required to meet as a condition of  
5 site certification" (Order 754, p. 38). Therefore, the Council provided no indication in  
6 this Order of what would be considered an acceptable and sufficient proposal for  
7 mitigating greenhouse gas emissions.

8 Second, in April 2001, the Council adopted Resolution No. 298 relating to technical  
9 amendments to the SCA for the permitted Satsop natural gas power plant. That  
10 resolution recognizes that an increase in the plant's permitted output will yield  
11 approximately a 10 percent increase in CO2 emissions. The Council adopted  
12 amendments to the SCA provided that:

13 the adoption of the amendments is made with the express acknowledgement that the  
14 Council is authorized under the SCA to compel Duke to prepare, submit and  
15 implement a Council-approved greenhouse gas and carbon dioxide mitigation plan.  
16 In the event that Duke fails to prepare, submit, and implement the Council-approved  
17 mitigation plan, this resolution shall be null and void. (Resolution No. 298, p. 4)  
18

19 Again, in this Resolution, the Council did not specify what would constitute a "Council-  
20 approved mitigation plan." Thus, it is appropriate to find guidance from Order 753,  
21 which requires full mitigation of CO2 emissions from the incremental addition of not-yet-  
22 permitted capacity for the Chehalis facility. In the case of the proposed S2GF, the facility  
23 has not previously received a permit and therefore the incremental addition of new  
24 capacity is the entire proposed 660 MW facility.

1 **Q. What is your understanding of the process for the developers of the Chehalis and**  
2 **Satsop facilities to develop and seek approval of their CO2 mitigation plans?**

3 R. In Order 753 (p. 28), the Council required Chehalis Power to submit a plan for offsetting  
4 CO2 emissions and other greenhouse gases within one year of the effective date of the  
5 Order. Chehalis Power will implement the plan following review and approval by the  
6 Council. In the SCA for Satsop, the Council requires the developer to submit a report to  
7 the Council regarding CO2 mitigation no later than one year prior to the turbines coming  
8 on line. Resolution 298 did not modify that requirement.

9 **Q. In the Chehalis Order and the Satsop Resolution, the Council deferred approving a**  
10 **specific greenhouse gas emissions mitigation plan. Would you support a similar**  
11 **course of action in this proceeding?**

12 R. I believe that relevant conceptual issues should be decided in this proceeding and  
13 incorporated into the SCA if the Council recommends approval of a permit for the S2GF,  
14 while final numbers can be calculated at a later date based on final design information as  
15 well as specific program implementation. If the Council moves forward with  
16 recommending a permit for the proposed S2GF, the Site Certification Agreement should  
17 clearly delineate the Council's expectations regarding mitigation of CO2 emissions. The  
18 record contains comprehensive and substantial evidence related to design of an  
19 appropriate CO2 mitigation plan for this facility.

20 **III. INSUFFICIENCY OF APPLICANT'S PROPOSAL FOR CO2 MITIGATION**

1 **Q. What is your understanding of the applicant's proposal for mitigating carbon**  
2 **dioxide emissions as described in the second revised application?**

3 R. The applicant proposes meeting the monetary path of Oregon's carbon standard:

4 SE2 proposes to mitigate and offset greenhouse gas emissions from the S2GF  
5 according to the monetary path payment requirements established [by] the  
6 Oregon Energy Facility Siting Council, Oregon Administrative Rules chapter  
7 345, except as otherwise provided herein. Ninety days prior to commencing  
8 operation of the S2GF, SE2 will submit for EFSEC's approval a calculation of  
9 the payment that would be required if the S2GF were subject to the Oregon  
10 Energy Facility Siting Council's Standards for Energy Facilities that Emit  
11 Carbon Dioxide. See Oregon Admin. Rules Chap. 345, Div. 24. Upon  
12 EFSEC's approval of SE2's calculation, SE2 will make the first of five equal  
13 payments totaling the amount due under this provision to the Oregon Climate  
14 Trust. SE2 will make each of the four subsequent payments on annual  
15 intervals. (2nd revised application, Sec. 2.11, p. 16)

16  
17 **Q. Has the Oregon Energy Facility Siting Council (EFSC) modified the monetary path**  
18 **payment requirements since the law passed in 1997?**

19 R. Yes. In his testimony (PGW-T, ps. 4-5), NWEW/WEC witness Peter West discusses  
20 these changes.

21 **Q. How did you interpret the applicant's commitment in the second revised application**  
22 **regarding mitigation of carbon dioxide emissions?**

23 R. I understood that the applicant would submit payments to The Climate Trust based on  
24 Oregon's rules in effect as of 90 days prior to the S2GF commencing operations.

25 **R. In your view, has the applicant retreated from this commitment?**

26 Q. Yes. In his direct prefiled testimony (Exh. 180, p. 20, ls. 27-35), Charles Martin indicates  
27 that SE2 plans to pay for carbon emissions mitigation at the old rate of \$0.57/ton rather  
28 than the rate that will be in existence three months prior to the facility commencing

1 operation. As discussed in Peter West's testimony, Oregon's EFSC recently approved an  
2 increase in the mitigation payment from \$0.57/ton to \$0.85/ton. EFSC has the statutory  
3 authority to continue to adjust the monetary offset rate, as long as the rate does not  
4 increase or decrease more than 50% in any two-year period, empirical evidence exists to  
5 support the new price of CO2 offsets and EFSC finds that the standard will be  
6 economically achievable for natural gas power plants (ORS 469.503, 2(c)(C)).

7 The second revised application does not specify a price per ton of CO2, but rather states  
8 that the applicant will follow the monetary path requirements of Oregon's EFSC, "except  
9 as otherwise provided herein." The applicant indicated only one exception to EFSC's  
10 requirements, i.e., submitting the calculated funds in five equal payments rather than one  
11 up front lump sum as called for in the Oregon standard.

12 Mr. Martin also suggests in his testimony that the Council reserve its decision about the  
13 recipient of the mitigation funds until a later date, rather than guaranteeing direction of  
14 the funds to The Climate Trust as stated in the application (Exh. 180, ps. 21-22).

15 **Q. What is your response to the applicant's suggestion that EFSEC reserve a decision**  
16 **about the recipient(s) of CO2 mitigation funds until a later date?**

17 **R.** If EFSEC decides to recommend a permit for the proposed S2GF, we would not oppose  
18 waiting until 90 days prior to the facility commencing operations to determine one or  
19 more appropriate recipients of greenhouse gas mitigation funds associated with this  
20 project, so long as selection criteria are rigorous. If the Council waits to select an  
21 appropriate third party to administer greenhouse gas mitigation funds, we strongly  
22 recommend at a minimum the following criteria be taken into account: established

1 experience in selecting, monitoring and verifying greenhouse gas emissions mitigation  
2 projects and offsets; a proven track record, including favorable financial audits;  
3 preference for an organization located in the Pacific Northwest, with representation from  
4 Washington (either existing or potential); and a commitment to report annually to the  
5 Council about progress in achieving offsets.

6 **Q. If the applicant adhered to its original commitment in the second revised application**  
7 **to provide funds at the price per ton of CO2 in effect in Oregon 90 days prior to**  
8 **commencement of operations of the S2GF, would that commitment be sufficient**  
9 **regarding mitigation of CO2 emissions from the proposed facility?**

10 R. No, although as we stated in our March 2001 response to the applicant's motion for  
11 reconsideration, the applicant's willingness to take a solid step in the right direction is  
12 positive. However, as I described previously, EFSEC's Order 753 sets an appropriate  
13 precedent for full mitigation of CO2 emissions from new thermal power plant capacity.  
14 As a reminder, the Oregon standard only requires partial mitigation, i.e., a developer must  
15 offset its CO2 emissions to a level 17% below the total CO2 emissions released by the  
16 most efficient currently operating combined cycle combustion turbine in the U.S. Even if  
17 the applicant upheld its commitment to mitigate greenhouse gas emissions as stated in the  
18 Second Revised Application, that mitigation would fall short of what is needed and  
19 would not reflect previous decisions of the Council.

#### 20 IV. WHAT CONSTITUTES FULL MITIGATION

21 **Q. You indicated that the applicant should fully mitigate the CO2 emissions from the**  
22 **proposed facility assuming a permit is granted, as opposed to simply meeting the**

1           **terms of Oregon’s carbon standard as proposed in the second revised application.**

2           **Please describe what you mean by full mitigation.**

3    R.     Determination of full mitigation of CO2 emissions from a natural gas power plant relies  
4           on several factors, including facility size and heat rate, facility life, facility capacity  
5           factor, number and timing of annual payments, and price per ton of carbon. We  
6           recommend that the Council require the applicant to fully mitigate the CO2 emissions  
7           from the proposed facility using the following parameters:

- 8           • Facility size = 660 MW
- 9           • Heat rate = calculated in accordance with the Oregon carbon standard
- 10          • Facility life = 30 years
- 11          • Capacity factor = 100%
- 12          • Number and timing of annual payments = 5 equal payments over the first five
- 13            years of plant operations

14  
15          Regarding the price per ton of carbon, our preference is for the Council to require the  
16          applicant to pay for mitigation projects at the average cost of carbon mitigation 90 days  
17          prior to the facility commencing operations. However, we also recognize the applicant’s  
18          request for certainty up front in approaching potential project financiers. We believe that  
19          EFSEC can accommodate that request by establishing a reasonable price per ton of  
20          mitigation now that reflects current available information. We propose setting the price  
21          of carbon emissions mitigation at \$2/short ton.

22   **Q.     How did you arrive at the price of emissions mitigation at \$2/short ton of CO2?**

23    R.     We took into account several factors in arriving at this number. First, we looked at  
24           existing data regarding the cost of CO2 mitigation projects. As discussed in Peter West’s  
25           testimony (PGW-T, p. 4, ls. 16-19), the Climate Trust paid on average \$1.27/short ton of

1 CO2 in its recent acquisitions (not including administrative costs due to selecting and  
2 contracting), and the anticipated rate for the second round of competitive solicitations is  
3 \$1.88/short ton. It is also appropriate to note that the \$0.85/short ton currently paid by  
4 natural gas power plant developers under the Oregon standard does not cover mitigation  
5 costs at even current rates. Oregon's EFSC acknowledges this shortcoming but, as  
6 mentioned earlier, is restricted by statute in how much it can increase the price per ton.  
7 We also examined data from the Greenhouse Gas Emission Reduction Trading Pilot  
8 (GERT), which facilitates trading between entities in Canada. Although GERT does not  
9 disclose actual prices paid when a trade occurs, its website does list several offers of  
10 projects for sale from 1998-2000, in the range of \$1.38-\$12.55 (converted into short tons  
11 and U.S. dollars).<sup>1</sup> As discussed in previous testimony (Exh. 121, p. 16, ls. 18-20, West),  
12 most credible CO2 mitigation and offset projects are in the range of \$1-5 per ton.  
13 Second, we considered the City of Seattle's forecast of \$5/metric ton (i.e., approximately  
14 \$4.46 per short ton) of carbon mitigation over the next few years, based on actual project  
15 bids received, expectation that prices are likely to increase in the future, and a focus on  
16 acquiring a portfolio of projects (KCG-T, p. 6, l. 7). We also took into account Seattle  
17 City Light's estimate of average cost for its first set of mitigation projects at \$2.40-  
18 \$3.64/metric ton (i.e., approximately \$2.14-\$3.25/short ton) (KCG-T, p. 5, ls. 19-21).  
19 Third, we examined the Draft Supplemental Environmental Impact Statement (DSEIS)  
20 issued in September 2001, which assumes a CO2 elimination unit cost of \$2 per ton  
21 based on best available current evidence (Exh. 204, p. 3.1-5).

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<sup>1</sup> <http://www.gert.org/listings/>

1 Fourth, we considered uncertainties regarding the timing of the S2GF commencing  
2 operations, and weighed those against the applicant's desire for certainty about mitigation  
3 costs as well as predictions about future cost of greenhouse gas emissions mitigation  
4 projects. Based on our analysis, we concluded that \$2/short ton is reasonable, supported  
5 by the evidence, and is at the low end of the range of current and probable future costs of  
6 CO2 mitigation projects.

7 **Q. Why do you believe that SE2 should be required to fully mitigate its CO2 emissions?**

8 R. As NWEC/WEC and other witnesses discussed in the first round of hearings regarding  
9 siting of the proposed facility, mitigation and offset is critical from an environmental  
10 perspective and predominant scientific and economic opinion favors immediate efforts to  
11

1 deal with the problem. Full mitigation also is economically achievable for the applicant  
2 (see PGW-T, ps. 12-13), and may provide special opportunities as markets for low impact  
3 and mitigated generation resources expand. For example, Seattle City Light will pursue  
4 sources of electricity with mitigated or no net greenhouse gas emissions to help in  
5 meeting the terms of the City's resolutions. A supplier that mitigates emissions, all else  
6 being equal, will have an advantage over a supplier that doesn't. Thus, requiring  
7 mitigation of CO2 emissions may even enhance the applicant's competitiveness in the  
8 market. It is also important to note that EFSEC considered the idea of competitiveness in  
9 the Chehalis proceeding and responded with the following statements in Order 753 (ps.  
10 27-28):

11 The Council still is not convinced that restrictions on greenhouse gas emissions will  
12 reduce the competitiveness of this facility with other energy producing plants. Similar  
13 facilities are being applied for and certified in Oregon, where greenhouse gas  
14 emissions standards and mitigation are imposed. Every facility that the Council sites  
15 has a mix of conditions attached to it and the presence or absence of a particular  
16 condition does not render the facility per se noncompetitive.  
17  
18 Finally, EFSEC not only has the legal authority to require SE2 to mitigate and offset CO<sub>2</sub>  
19 emissions from the proposed facility (see NWE/WEC post-hearing brief, ps. 2-4), but  
20 also has a legal obligation to mitigate adverse environmental impacts and act as a trustee  
21 of the environment for succeeding generations (WAC 463.47.110). This legal authority  
22 and obligation support a requirement for full mitigation of CO2 emissions from the  
23 proposed facility.

1   **Q.     In his testimony, Mr. Martin refers to three reasons why he thinks EFSEC should**  
2       **not require full mitigation of CO2 emissions from the proposed facility (Exh. 180,**  
3       **ps. 24-26). How do you respond?**

4   **R.**     Mr. Martin opposes a requirement for full mitigation because Washington has not  
5       adopted a statewide standard; he believes that the proposed facility should not face  
6       additional requirements that may hinder it from displacing coal plants; and he challenges  
7       the fairness of requiring only new facilities subject to EFSEC jurisdiction to mitigate  
8       their emissions. With regard to his first and third objections, we agree that a CO<sub>2</sub>  
9       standard for all fossil fuel facilities in Washington needs to be developed, as well as  
10      regulations for other significant emitters of greenhouse gases. However, EFSEC  
11      currently is deliberating on whether to permit the proposed facility. A significant lost  
12      opportunity will occur if the Council waits until a standard is developed and adopted for  
13      all facilities because the applicant probably would not be required to meet that standard.  
14      It is extremely difficult to apply newly developed standards to facilities that have been  
15      permitted and begun operations. Therefore, if a permit is approved for the proposed  
16      facility, it should contain a requirement for full mitigation of CO2 emissions. This  
17      decision can become a *de facto* guideline until such time as the Council or the Legislature  
18      has the opportunity to adopt general guidelines.  
19      With regard to Mr. Martin's second objection, the applicant tried to make the case in the  
20      first round of hearings that the proposed facility would displace coal and other dirtier  
21      resources, but did not produce any data to substantiate this hypothesis. Fossil fuel and  
22      coal resources in the Northwest have not been curtailed in recent years due to more

1 efficient plants coming on line, both because the older plants are depreciated and  
2 therefore cheaper and because of load growth. Thus, the construction and operation of  
3 the S2GF will lead to a direct substantial increase in CO<sub>2</sub> emissions. It is interesting to  
4 note that the Council responded in Order 753 (p. 28) to similar arguments presented by  
5 the developer of the Chehalis Generation Facility stating that “there is no evidence that  
6 the construction of this or any other gas-fired energy facility will result in the closure of  
7 coal-fired plants with higher emissions.”<sup>2</sup>

8 **Q. Does this conclude your testimony?**

9 **R.** Yes.

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<sup>2</sup> Note that the applicant’s witness Mr. Montgomery also served as a witness for Tractebel in the Chehalis proceeding before EFSEC, arguing that EFSEC should not require natural gas power plants to offset their greenhouse gas emissions because he believes that these facilities will displace coal (Exh. 192, p. 5, ls. 22-33)

**END OF TESTIMONY**

I declare under penalty of perjury that the above testimony is true and correct to the best of my knowledge.

**DATED: September 28, 2001**

**By:**\_\_\_\_\_

**Nancy Hirsh**